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MAN AS A SUBJECT FOR SCIENCE

> 'Oh, the monster!' exclaimed the Reverend Doctor Folliott, 'he has made a subject for science of the only friend he had in the world.'
>
> Peacock, *Crotchet Castle*.

THOSE who catch the allusion in my title may remember that the science in question was anatomy. The devotees of science to whom Peacock was referring were body-snatchers who provided medical students with corpses for dissection: for in 1831, when *Crotchet Castle* was published, it was still thought improper, mainly on religious grounds, to treat even lifeless human beings as subjects for experiment. But the march of mind, of which these criminals were supposed to be the camp-followers, had far more ambitious aims than that which they were serving. It was the belief of the positivists and utilitarians who gave its progressive intellectual tone to the first half of the nineteenth century that the science of nature which Newton had established was due to be completed by a science of man. This was not merely a question of supplementing physics with biology: the empire of science was to be extended to every facet of man's nature; to the workings of men's minds as well as their bodies and to their social as well as their individual behaviour; law, custom, morality, religious faith and practice, political institutions, economic processes, language, art, indeed every form of human activity and mode of social organization, were to be explained in scientific terms; and not only explained but transfigured. For Comte and Bentham and their followers, no less than for the Marxists, the point of understanding society was to change it; there was a rational way of ordering human affairs, and it only required the application of scientific method to discover it and put it into operation.

It is not an underestimate of what has been achieved in the social sciences to say that these hopes have not been fulfilled. Auguste Comte died in 1852, just a year after the opening of the Great Exhibition, which expressed a faith in the power of science that has indeed been justified; it has been more than a century of astonishing scientific progress. But the progress has been in the physical and, to a rather lesser but still very considerable extent, the biological sciences; the social sciences have not kept pace. Admittedly they began this period in a very much less favourable position; neither would it be fair to say that they have made no progress at all. How great this progress has been is not very easy to assess. A large body of economic doctrine has been built up, but the deductions which are made from it appear still to fit rather loosely to the facts; the emergence of psycho-analysis, particularly in its Freudian version, has had important social and literary effects; it would not be too much to say that our ideas of human nature have been transformed by it; even so the charge that psycho-analytical theories are not testable has not been effectively met, and so long as this is so their scientific value remains in doubt: in anthropology the reaction against the rather too facile acceptance of far-reaching theories has led to a puritanical distrust of generalization: the theoretical contribution of Marxism to the study of history, though not entirely negligible, falls a long way behind its practical influence. All in all, the stock of generally accredited and well-tested theories that the social sciences can muster is comparatively small. The social scientist may well look on the garden of the natural sciences as an intellectual paradise from which he has lamentably been excluded.

But why should this be so? Is it just that the factors which govern human behaviour are unmanageably complex? Is it that for moral and practical reasons there are rather narrow limits to the type and number of experiments that can be carried out on human beings? Have the wrong methods been pursued? Have the right questions not yet been asked? Are the social sciences merely waiting for their Galileo or their Newton? Or is there some more fundamental reason, some reason of principle, why the kind of success that the natural sciences

have had is here unattainable? This is the first question that I wish to examine.

In whatever other ways they may differ, the various special sciences at least have this in common—that they contain a set of what are anyhow provisionally taken to be valid generalizations. These generalizations may be more or less abstract; they may be causal or statistical in form; they may or may not be capable of being organized into a deductive system; they may be valued primarily for their own sakes or for the particular inferences which can be made from them, according to the character of the science and the view which is taken of it: all that I am now concerned with is that they must exist. Now it is characteristic of the social sciences that their stock of generalizations is relatively poor. For the most part the generalizations which they do claim to have established are lacking in precision and scope; and in some fields at least, they are not very well attested. This is sometimes taken merely as an indication that the social sciences are still in their infancy; they are still at the stage of building up the data from which a stock of fruitful generalizations will later spring. But may not the explanation be quite different? May it not be that there is something about the material on which these sciences have to work, something about the nature of men, which makes it impossible to generalize about them in any way comparable to that which has made the success of the natural sciences? If this were so, the rather poor showing which men have so far made as anything but purely biological subjects for science would be logically accounted for.

The idea that man somehow stands outside the order of nature is one that many people find attractive on emotional grounds, so that it has to be received with some caution. It is, however, fairly widely accepted nowadays, even by philosophers who are supposed to be able to discount their emotional prejudices, and this for various reasons. One of them is, of course, the belief in the freedom of the will. It is argued that since men are free to behave as they choose, they are always capable of nullifying any generalization about their conduct to which they are alleged to be subject. If any such generalization is produced, it is only to be expected that some one will

proudly or perversely exercise his option of rendering it false.

The trouble with this argument is that it simply assumes the falsehood of the position which it is intended to demolish. If the attribution of free will is construed in such a way that a man can be said to have acted freely only if his action is not susceptible of any causal explanation, then there will indeed be no question but that if men ever act freely, their behaviour is not totally subject to causal law. This still allows for its being subject to statistical laws, but on the assumption, which the proponents of this view tacitly make, that a man is free on any given occasion to try to do anything whatsoever that he believes to be feasible, the possibility of there being even statistical laws about human behaviour which would be of any scientific value is effectively excluded. But now it is surely fair to ask for some justification of these very strong assumptions. What reason have we for believing that men ever do act freely, in this sense? There may be a *prima facie* case for holding that men are capable of acting freely in some sense or other; but it is by no means clear that an action which passes this test of freedom, whatever it may be, cannot also be governed by some causal law. Many philosophers have in fact held that what we ordinarily mean by speaking of an action as freely done is not incompatible with its being causally determined: some have gone even further to the point of holding that when we say that an action is free we actually imply, or presuppose, that it is determined; others who take the view that determinism excludes free will, as this is ordinarily understood, have concluded just for this reason that our ordinary notion of free will has no application. I do not myself think that we stand to gain very much by making a conscientious effort to discover what people ordinarily mean when they talk about free will: it might very well turn out that some people mean one thing by it, and some another, and that many people's idea of it is very confused. The important question, so far as we are concerned, is whether human behaviour is or is not entirely subject to law. If we conclude that it is, or even just that there is no good reason to suppose that it is not, then we may find it expedient to introduce a sense of acting freely which squares with these conclusions. We shall presumably want it to apply, so far as

possible, to the same actions as those that most people would now regard as being free, though not necessarily with the same implications, but we shall rather be correcting ordinary usage than merely following it. If, on the other hand, our conclusion is that human behaviour is not entirely subject to law, then again we shall have to decide what provision, if any, this enables us to make for freedom of action; for example, if we make the absence of causal determination a necessary condition of an action's being freely done, we shall have to consider whether we can still preserve the connection between freedom and responsibility. But the point is that before we can usefully embark upon such matters, we must first decide the issue of determinism. How far and in what sense is man's behaviour subject to law?

It may appear, indeed, that this is not an issue which one could hope to settle *a priori*. Surely, it may be said, we can never be in a position to show that any piece of human conduct is inexplicable: the most that we can claim is that we have not been able to find any explanation for it, but this does not imply that there is no explanation, or even that the explanation is one which it will always be beyond our power to discover. But while this remark is perfectly sound, it may also be thought to miss the point. For what is most commonly maintained by those who wish to set limits to the extent to which men's actions are governed by law is not that these actions are inexplicable, but rather that the kinds of explanation which they call for do not conform to the scientific model. That is to say, they do not account for an action as resulting from the operation of a natural law. It is allowed that explanations of the scientific type are sometimes appropriate, as when we account for some piece of deviant behaviour by relating it to a disorder in the agent's constitution, but cases of this kind are said to be the exception rather than the rule. In the normal way we explain a man's action in terms of his intentions, or his motives, or his beliefs, or the social context in which the action takes place. Consider, for example, the simple action of drinking a glass of wine. As performed by different people in different circumstances, this may be an act of self-indulgence, an expression of politeness, a proof of alcoholism, a manifestation

of loyalty, a gesture of despair, an attempt at suicide, the performance of a social rite, a religious communication, an attempt to summon up one's courage, an attempt to seduce or corrupt another person, the sealing of a bargain, a display of professional expertise, a piece of inadvertence, an act of expiation, the response to a challenge and many other things besides. All these are accepted as good explanations: if the circumstances are right, they render the performance of the action intelligible; but only in the case of the alcoholic is it clear that the explanation is of a scientific character. In the other cases we find the action intelligible because we are given a reason for its performance; it is explained in terms of the agent's purpose, or by reference to a social norm, or through some combination of these two.

This is a fair enough statement of the facts, but it raises a number of quite difficult questions which we shall have to examine rather carefully before we can draw any conclusions about the extent to which human conduct eludes the grasp of science. Exactly how do explanations in terms of purpose operate and in what way are they explanatory? In particular, how do they significantly differ from explanations in terms of causal laws? What kind of understanding of an action do we acquire when we are able to fit it into a social context, or see it as fulfilling a social norm? In what sense, again, is this an explanation of the action? And finally, even if a reason can be found for saying that explanations of these types are not, or not wholly, scientific, does it follow that the actions which they explain cannot also be explained in a way which does confirm to the scientific model? Assuming that we do have to deal here with two or more radically different sorts of explanations, are we bound to conclude that they are mutually exclusive?

Let us begin then with the type of explanation in which an action is accounted for in terms of the agent's purpose. In the standard instance of this type, the agent has some end in view which he wishes to attain and believes that there is a causal connection between the performance of the action and the attainment of this end; he need not believe that the performance of the action is a necessary condition for the attainment of the end, since he may suppose that the end could

come about, or even that he could bring it about, in other ways, and he need not believe it to be a uniquely sufficient condition, but he must at least regard it as part of a sufficient condition. This is most commonly expressed by saying that the agent takes the action to be a means towards the end in question. And correspondingly the end or rather, to speak more accurately, the agent's desire for the attainment of the end is said to be the motive for his action. It is not indeed essential that the motive should be conscious: we do sometimes explain a man's behaviour in terms of an end which he is not himself aware that he is pursuing. Sometimes we even discount the motive which he thinks he has in favour of the unconscious motive by which we judge that he is really actuated. However, the cases in which we speak of unconscious motives are modelled on those in which the motive is conscious. The reason why we credit a man with pursuing an end of which he is unaware is that his behaviour, in the given circumstances, not only indicates that he finds the end desirable but also resembles the behaviour which might be expected of one who was consciously pursuing it.

It is not necessary either that the agent's belief in the efficacy of the means should be fully articulated. That is to say, he does not have to formulate the proposition that such and such a course of action will conduce to his end. It is enough that he acts as though he took this proposition to be true and, in the case where his motive is conscious, that he assents to it if it is put to him. The proposition may on occasion be false, in the sense that the means which are supposed to be sufficient in the attendant circumstances for the production of the end do not in fact produce it; and it may also happen that the agent is mistaken about the circumstances. He may adopt a course of action which would have been sufficient for his purpose if the circumstances had been what he took them to be, but which is not sufficient as things actually are. This is a more common cause of failure than the other, but failure of any kind is less common than success. We should not be satisfied with the assignment of men's purposes as explanations for their actions, if they did not in general attain their ends.

The case which I have been taking as standard is that in which a man's action is directed on a particular occasion towards some specific end. In a situation of this kind, the action which the agent takes may not be the only one which he regards as suitable for his purpose, but the range of actions of which this is true is likely to be fairly narrow. There are, however, cases in which the assignment of a motive covers a rather wide range of behaviour, and these are usually also cases in which the end towards which the behaviour is directed is not very specific. I am thinking of the sort of actions which are done from what one might call a standing motive, a motive like that of ambition or avarice, or a love of learning. The end of being powerful or famous or rich or learned, or whatever it may be, is unspecific in the sense that it may take many different concrete forms and the means to it may be correspondingly various. The agent himself may not envisage at all clearly what form the achievement of his end will take, and he may even have no considered idea of the way in which he will set about pursuing it. His having the motive is rather a matter of his being disposed to accept whatever opportunity arises of achieving his end in one form or another. In cases where the motive is something like the love of learning, it may amount to little more than his seeking opportunities to engage in a certain sort of activity. It is, however, to be remembered that where an activity is mainly undertaken for its own sake, the description of it in terms of purposes or motives seems a little out of place. It is perhaps not incorrect to say that my motive for reading novels or playing bridge or going to the cinema is that I enjoy these pursuits, but if I were asked what my motive was for engaging in them I should be more inclined to answer that I had no motive at all.

In his book on *The Concept of Motivation*, Professor Peters goes much further than this. He not only allows that there can be voluntary behaviour which is not motivated, but he does not think it correct to talk of there being a motive even in all cases in which an agent takes means towards a further end. The cases which he wishes to exclude are those in which our actions are habitual or fit into some conventional pattern. He thinks that the word 'motive' is commonly 'used in contexts

where conduct is being assessed and not simply explained, where there is a breakdown in conventional expectations', and therefore wishes to restrict its application to purposeful actions which are somehow out of the ordinary and in particular to those in which we are inclined to pass an adverse moral judgement. There is indeed some warrant for this restriction in ordinary usage, in the sense that we do not normally inquire into people's motives unless we are surprised by their conduct or think that they are called upon to justify it. I should think it strange if someone asked me what was my motive in putting on my overcoat to go out on a winter's day, and I might be inclined to take offence if someone asked me what was my motive in asking a friend to dinner. But the reason why such questions appear strange or offensive is not that conventional actions are not motivated, or that motives tend to be discreditable, but simply that we do not bother to ask questions to which we already know the answers. The desire to keep warm, or the desire to give pleasure to a friend or to enjoy his company are just as much motives for action as the more unusual desire to catch cold, say with a view to avoiding some disagreeable duty, or the desire to worm information out of a friend or to borrow money from him. There seems to be no good reason to exclude them merely because they are innocent and commonplace. It is not as if they functioned any differently as springs of actions from motives which are ulterior in the pejorative sense.

I do, however, agree with Professor Peters, as against, for example, Professor Ryle, that for an action to be motivated it is at least necessary that it be directed to an end. Professor Ryle has gone astray, in my opinion, through concentrating, almost exclusively, on actions which are done from standing motives, where, as we have seen, the ends are relatively unspecific; so unspecific, in fact that Ryle effectively ignores them.[1] In this way he comes to assimilate actions which are done from standing motives, like ambition, to actions like habitual chess playing which are not done in the pursuit of any further end at all, and so he finds himself able to conclude that motives can be wholly analysed in terms of dispositions, that

[1] See *The Concept of Mind*, ch. iv.

to act from such and such a motive amounts to no more than being disposed to engage in behaviour of such and such a type. Accordingly he interprets explanation in terms of motives as if it were simply a matter of subsuming the particular under the general case, as when we say that a piece of glass has broken because it was brittle, or that a man is late on a particular occasion because he is habitually unpunctual. This is not even a very plausible account of explanation in terms of a standing motive, and quite obviously wrong when it is applied to actions which are explained in terms of the agent's aiming on a given occasion at some specific end. Indeed one of my reasons for giving central importance to actions which are done from occasional motives is that the element of directedness there stands out more clearly.

Of course Professor Ryle himself has a motive for dissolving motives into dispositions. It is an important part of his campaign against the idea of the ghost in the machine to dismember the mechanical model, in which motives are conceived as 'ghostly thrusts'. And whatever the deficiency of his tactics his strategy has been successful. Thanks to him and also to Wittgenstein it is now almost a commonplace among philosophers that motives are not causes. But this is not to say that it is true.

Why is it thought to be true? There are various reasons, not all of them of equal weight. The most simple of them is that motives operate *a fronte* whereas causes operate *a tergo*; to put it crudely, that causes push while motives pull. A more sophisticated argument is that cause and effect are distinct events: so, if the motive for an action caused it, it would have to be a separate occurrence which preceded the action or at any rate accompanied it; but in many, perhaps in most, cases of motivated actions, such separate occurrences are simply not discoverable; the specification of the motive is part of the description of the action, not a reference to anything outside it, and certainly not a reference to any distinct event. Thirdly, it is argued that in the scientific sense of 'cause', which is what is here in question, even singular causal statements are implicitly universal; to say that one particular event is the cause of another is to imply that events of these types are

invariably connected by a causal law: this is not true, however, of statements in which a motive is assigned for some particular action; such a statement does not imply that whenever people have motives of the kind in question they act in a similar manner, or that whenever actions of that type are performed they are done from the same sort of motive. Finally, a point is made of the fact that motivated action often consists in following or attempting to follow a rule; that is to say, the action may be one to which normative criteria are applicable; the question arises whether it has been performed correctly; but this means, so it is argued, that we somehow impoverish the motive if we regard it merely as a cause.

Let us now examine these arguments in turn. The first of them need not detain us long. If the contention is that purposive behaviour is to be accounted for, not as the response to any past or present stimulus, but rather in terms of the future state of affairs towards the realization of which the behaviour is directed, the argument fails for the simple reason that there may not in fact be any such future state of affairs. Even if men generally succeed in fulfilling their purposes, they do sometimes fail, and the explanation of their embarking on the action must be the same whether the purpose is fulfilled or not. But this is enough to rule the end out of court as a determinant of the action. I do not share the qualms that some people feel about the idea of an event's being pulled into existence by one that does not yet exist, for these metaphors of pushing and pulling must not be taken too seriously; there is no great difficulty in regarding an earlier event as a function of a later one. But however little we are influenced by the metaphor, we cannot think it possible that an event may be pulled into existence by one that never exists at all.

But this, it may be said, is to take an unfairly naïve view of the argument. Its point is not that purposive behaviour is to be explained in terms of its actual achievement but rather that it has to be understood as tending towards a certain end, whether or not this end is actually attained. A general may not succeed in winning his battle, a chess player may not succeed in mating his opponent, but in order to make sense of their manoeuvres, we have to know that these are their aims. If we

want to explain behaviour of this kind, the question which we have to ask is not what impels it but where it is directed; and the same applies at all levels down to the rat, or even the mechanical rat, in the maze.

This is all very well, but does it not concede the point at issue? For what is now singled out as the explanatory fact is not the end towards which the behaviour is directed, considered as a future event, but rather the agent's having this as his aim. The suggestion is that the agent behaves as he does because he has a conscious or unconscious need or desire for such and such a state of affairs to be realized. And why should not this be said to impel him?

At this point, the first argument dissolves into the second. For the answer which will be given to our last question is that very often these desires and needs do not exist independently of the behaviour which they are supposed to impel. No doubt there are cases in which a man is impelled to action by a felt desire for the end which he believes that the action will secure him, but even in many cases in which an agent would be said to be conscious of his purpose, his action is not preceded by any psychological occurrence which could figure as his desire for the end in question. His consciousness of his purpose, in so far as it is anything apart from his behaviour, may just consist in his ability to say what it is, if the occasion for this arises; it is not required that he should actually have formulated it even to himself. If the agent is not conscious of his purpose, it is still less likely that he will have had any distinctive experience which can be identified as the felt desire or need for the end towards which his action is directed. In such cases we may indeed conceive of the agent's desire as an unconscious mental state which drives him to act as he does; if we have a materialistic outlook, we may identify his desire or his need with some physical state of his organism; but to have recourse in this way to the unconscious or to physiology is to put up a theory which may account for the agent's having the motive that he has rather than to offer an analysis of what the motive is. What it provides at best is a problematic explanation of the existence of the motive; but what is wanted here, and what it does not provide, is an account of the motive as

being itself an explanation of the action which it governs.

Again this is all quite true, but it proves very little. If one starts with the assumption that motives can cause the actions which they motivate only if they are 'ghostly thrusts', that is only if they take the form of distinctive experiences which precede or accompany the action, then indeed this argument will show that motives need not be causes. But the assumption is unjustified. It is true that a cause must be distinguishable from its effect, but there are other ways in which a motive can be independent of the action which it motivates than by figuring as a distinct experience, or even as an element in a psychoanalytical or physiological theory. The reason why we say that an action is done from such and such a motive may be no more than that the agent behaves or is disposed to behave in a certain fashion; but the point is that the description of the behaviour which constitutes his having the motive need not be identical with, or even include, a description of the action to which his having the motive leads him. On the contrary, if the assignment of the motive did not refer to something other than the action, if it did not associate the action with anything else at all, it is hard to see how it could have any explanatory force: merely to redescribe a phenomenon is not in any way to account for it. Yes it is, someone may say, if the redescription tells us more about the phenomenon; the assignment of a motive is explanatory in the sense that it enlarges our description of the action; it fills in an important gap in the story. But at this stage the dispute becomes merely verbal. If anyone wishes to give such a wide interpretation to the concept of an action that the motive from which the action is done is counted as a part of it, well and good: this is not perhaps a very felicitous usage, but it is manageable. The point still remains that if the initial description of the action does not include a reference to the motive, then the provision of this reference does link the behaviour which has been described to something beyond it, whether it be a distinctive experience or, as is more commonly the case, a further item or pattern of actual or potential behaviour; and it is only because it does this that the reference to the motive is explanatory. Indeed, this would seem to be the main characteristic of explanations in terms of

motive, or more generally in terms of purpose. They serve to establish a lawlike connection between different pieces of behaviour.

This may operate in various ways. The simplest level of purposive behaviour is that which is ascribed to a homoeostatic system. The behaviour of the system on any given occasion is seen as exemplifying a uniform tendency to maintain equilibrium; it is purposive just in the sense that under varying conditions it operates so as to attain the same end-state. Much the same applies to the case of the animal, or the machine in the maze; what makes its behaviour purposive is that its agitation habitually continues until it emerges from the maze; in this instance the directional aspect of the behaviour is underlined by the fact that the individual trials may be stages in a process of learning, in which case they are related in a lawlike fashion to one another. If the animal is given a reward for its success, its appetite for the reward may be a measurable causal factor in the process of its training. The sense in which the animal looks for the reward, and so may be said to have this as its motive, is just that its behaviour would not be quite what it is if the reward had not been given to it on previous occasions. When it comes to simple human actions like putting on an overcoat to go out on a winter's day, our explanation derives its force from some such presupposition as that people in general under conditions of this kind do what they can to protect themselves against the cold. That this is the agent's motive on this particular occasion, rather than, say, a desire to appear well dressed, may indeed be discoverable only through his own avowal of it. But then his disposition to make this avowal, at any rate to himself, is a causal condition of his action. If he were not disposed to make it, then he would not in these circumstances be acting as he does. Otherwise there is no ground for concluding that this is his motive. In a more complicated case, like that of the general planning his battle, the general's desire for victory, if that is in fact his motive, may be exhibited in a fairly wide range of behaviour, apart from his conduct of this particular engagement. And here again, if the assignment of the motive is to have any explanatory force, we must be in a position to say that unless he

behaved, or was disposed to behave, in these other ways he would not in the circumstances be planning the battle in the way that he does.

In all this there is little that is controversial. No one would deny that purposive behaviour fitted into some sort of pattern, and it seems pretty obvious that the assignment of motives could not be explanatory unless some lawlike connections were indicated by it. What may, however, still be disputed is that these connections are causal. It may be contended that the rough regularities in behaviour, which are all that we have seen to be required for the applicability of a purposive explanation, do not fit the standard model of the relation of cause and effect.

Once more this is partly a question of terminology. If we construe the causal relation in a strictly Humean fashion so that its terms can only be distinct events, then the objection holds. For we have seen that in many quite typical cases the motive may be present in the form of a disposition which, though distinct from the behaviour which it motivates, is still not exactly a distinct event. It seems to me, however, that even from the point of view of doing justice to the ordinary, let alone the scientific, use of causal language, this conception of the causal relation may be too restrictive. For one thing, we often want to be able to regard the absence of some circumstance as a causal factor, that is, to admit negative as well as positive conditions, and even this does not fit tidily into the Humean scheme. I have, of course, no quarrel with Hume's fundamental idea that causation must in the end be a matter of regular concomitance, but I suggest that causal relations should be regarded as holding between facts rather than events, where 'fact' is understood in the wide sense in which true propositions of any form can be taken as expressing facts. This involves no sacrifice, since in any cases where it is appropriate these causal statements about facts can be translated into statements about events; it merely extends the field of causal relations a little more widely. Then the sense in which an agent's motive may be said to be the cause of the action which it motivates is that given certain conditions the fact that the agent performs the action is inferable from

the fact that he has the motive in virtue of a causal law.

But just as the first of the arguments which we listed dissolved into the second, so, if I am right in what I have just been saying, the second dissolves into the third; for now the question arises whether there really are such causal laws. On the face of it, it seems at least very doubtful. As I said when I first referred to this argument, it is surely possible for someone to act from a given motive on a particular occasion without its being the case either that whenever anyone has a motive of this kind he acts in this way, or that whenever anyone acts in this way he does so from this kind of motive. No doubt there must be some degree of regularity in the way in which motives lead to actions, for us to find the connection intelligible. If people hold very queer beliefs, they may indeed take means to a given end that others would not take; in this sense the connection between motive and action may even be quite idiosyncratic. It remains true, however, that people in general do what they believe will enable them to achieve their ends, and that these beliefs, though they may be false, are usually backed by a fair amount of evidence. The result is that there is at least a tendency for similar motives to be correlated with similar actions. This tendency is especially marked in the case of standing motives. The range of behaviour which we are prepared to ascribe to jealousy, or greed, or ambition is fairly narrow. Even so, it will be objected, such tendencies, at their very strongest, fall a long way short of being causal laws.

All this is true, but possibly not decisive; for it may be that we are looking for our causal laws in the wrong place. The point from which I think that we should start is that when a man is said to have acted in consequence of having such and such a motive, it is implied at least that if he had not had this motive he would not in the particular circumstances have acted as he did. But this is to say that the existence of the motive is taken to be a necessary condition of the action; not indeed a necessary condition of anyone's performing the action at any time, or even of the agent's performing it at any time, but a necessary condition of his performing it at just this juncture. The question then arises whether it is also taken to be part of a sufficient condition, and this is not easy to answer.

The ground for arguing that it must be is that otherwise the ascription of the motive would not properly account for the action; we should have to allow that even granting the agent's motive and the rest of the attendant circumstances, including all the other aspects of the agent's mental and physical condition at that time, we could not entirely rely on the action's taking place; and to this extent its occurrence will still be unexplained and indeed inexplicable. There may, however, be those who are prepared to accept this consequence, so long as they can hold that there is a high probability in this situation of the action's taking place: that is, they may be satisfied with the hypothesis that if the situation were repeated a great number of times the action would take place very much more often than not. But since this leaves an element of arbitrariness, in that we have no answer to the question why it should ever not take place, it seems preferable to make the stronger claim, unless it can shown to be untenable. The suggestion then would be that whenever an agent can properly be said to have acted exclusively from a given motive, the circumstances must be such that in any situation of this kind, indispensably including the presence of such a motive, an action of this kind invariably follows.

It is clear that if so strong a claim as this is to be made to appear even plausible, a great deal will have to be included in the situation, both in the way of positive and negative conditions. We must, however, avoid including so much detail in the description either of the situation or the action that our claim becomes trivial; our ground for saying that there is an invariable connection between situations and actions of the sorts in question must be not that either the situation or the action is unique. In other words, the types of fact which our laws connect must be envisaged as repeatable.

But where are these connections to be found? Surely it is idle to maintain that these laws exist if we are unable to produce any examples. Well, perhaps we can produce examples of a rather humble kind. Let us begin with the hypothesis that whenever a person has a desire for the existence of a state of affairs S and believes that it is immediately in his power to bring about S by performing the action A, but not by any other

means, and there is no state of affairs S^1 such that he both prefers the existence of S^1 to that of S and believes it to be immediately in his power to bring about S^1, but not conjointly with S, then unless he is prevented he will perform the action A. This is not quite a tautology, since the existence of the agent's desire is supposed to be established independently of his taking any steps to satisfy it. On this account, indeed, it may even not be unconditionally true: there may be cases of inhibition which would have to be specially provided for. But even if this difficulty can be overcome, the hypothesis still falls short of what we want because its consequent is subject to a general proviso: the person who satisfies the antecedent will perform the action A unless he is prevented. The question is whether this proviso can be dispensed with.

The way to dispense with it would be to list all the things that might prevent the action from being done, and insert them in the antecedent in the form of negative conditions. This would seem indeed to be an impossible undertaking at this level of generality: we could hardly hope to draw up an exhaustive list of negative conditions which would at this point apply to any action whatsoever. But in its application to particular instances, our general hypothesis will in any case dissolve into a number of more specific ones, according to the nature of the case: and once the relevant type of action and perhaps also certain features in the situation of the agent have been specified, it does not seem to me obvious that the list of negative conditions cannot be completed. Thus if the action is one which involves making a certain sort of hand movement, there may be a finite number of types of bodily disorder which would prevent it from being carried out; if it involves handling certain physical objects, there may be a finite number of ways in which they could become intractable; if the condition of the agent is specified, the types of psychological impediment to which he is then subject may again be finite in number: and if the number of these various factors is so limited, there seems to be no compelling reason to hold that they cannot be discovered and listed.

Of course we shall have no guarantee that the list is complete; but then we do not have such a guarantee in the case of

laws of any other type. However carefully a generalization is formulated it must at least remain conceivable that it holds only under certain further conditions which we have failed to specify. Technically, if there are found to be such conditions, the generalization is falsified, though sometimes we prefer to regard it as having been incompletely stated. I do not, however, agree with those who would read into every generalization of law a *ceteris paribus* clause which tacitly protects it from being falsified through the operation of factors which the proponent of the generalization did not foresee. No doubt it is too much to require, as John Stuart Mill did, that causal laws should hold unconditionally, if this is understood to imply that they would still be true no matter what else were true; for one law often depends upon others, so that its truth would not be preserved if these other laws were false. It is, however, not too much to require that the law should hold under any circumstances whatever that actually arise. If the field which it is designed to cover is restricted, this limitation can and should be made explicit.

If *ceteris paribus* clauses were allowable, the task of finding laws in the sphere of human action would be very much easier, but as our example has shown, these provisos would only increase the laws' security at the expense of their scientific interest. Even as it is, our hypothesis contained a stipulation which would often not be satisfied. It is by no means invariably true that when someone is aiming at a given end he believes that there is only one means of attaining it which it is immediately in his power to realize. Very often he will be presented with a choice of such means, so that it needs to be explained why he selects one of them rather than the others. I have no doubt that a number of examples could be found in which I should not know how this was to be done, but I suggest that quite a lot of cases would be covered by the following hypothesis: whenever the antecedent of our first hypothesis is satisfied, with the difference that the agent believes that it is immediately in his power to bring about S not only by performing the action A but also by performing the action A^1, but that he cannot perform both, then if he believes that A and A^1 are equally efficacious in bringing about S, but prefers what

he expects to be the other consequences of A to those which he expects of A^1, he will, unless he is prevented, perform the action A. Again, if this is not to be tautologous, there must be evidence for his preferring the other expected consequences of A to those of A^1, independently of the fact that he does perform A, but I think it fair to assume that this will usually be available. Our hypothesis does not, of course, commit us to holding that whenever an agent has a choice between actions of the kind A and A^1 as means to a given type of end S, he will choose A. A man may well decide to walk to work on one occasion and take a taxi on another. But then the assumption is that there is a change in the circumstances, in the state of his health or his finances or the weather or some other combination of factors, which will sufficiently account for the variations in his preference. I admit, however, that until a set of such hypotheses has been formulated and tested, the degree of strength that we can attribute to generalizations about human conduct remains an open question.

The most that I would claim at this stage is that the difference between these generalizations and those that can be found to govern other natural phenomena is nowhere more than a difference of degree. What I have tried to show, in arguing that motives may be causes, is that there is no warrant for regarding explanation in terms of motives as something of a different order from the explanations that occur in the physical sciences. There is nothing about human conduct that would entitle us to conclude *a priori* that it was in any way less lawlike than any other sort of natural process.

But what of the argument that human actions conform to rules, that we are often more interested in judging whether and how far they are up to standard than in discovering how they came about? I cannot see that it is relevant. From the fact that we can estimate an action in terms of its conforming to a rule, it no more follows that the performance of the action is not causally explicable than it follows that the appearance of a rainbow is not causally explicable from the fact that it can be made the subject of an aesthetic judgement. To explain something causally does not preclude assessing it in other ways. But perhaps the suggestion is merely that to relate an action to a rule

is one way of accounting for it, and, in the present state of our knowledge, a better way of accounting for it than trying to subsume it under dubious causal laws. I cannot even agree with this because I think that it presents us with a false antithesis. The only reason why it is possible to account for the performance of an action by relating it to a rule is that the recognition of the requirements of the rule is a factor in the agent's motivation. He may attach a value in itself to performing a certain sort of action correctly; he may see its correct performance as a means towards some further end; or it may be a combination of the two. In any event this is as much a causal explanation as any other explanation in terms of motive. The invocation of rules adds nothing to the general argument.

The same applies, in my view, to the argument that actions most often need to be understood in terms of their social contexts. A great deal is made by some philosophers of the fact that an action is not a mere physical movement. It has a significance which depends not only on the agent's intention and motive, but very frequently also on a complex of social factors. Think of the social norms and institutions that are involved in such commonplace actions as signing a cheque, signalling that one is going to turn when one is driving a car, saluting a superior officer, playing a card, shaking hands with someone to whom one has just been introduced, waving goodbye to a friend. To represent these merely as different sorts of hand-movements, which of course they also are, is to miss their significance; it is indeed to fail to represent them in their character as actions.

All this is true, except that it seems to be an arbitrary question what we are to regard as constituting an action: whether, for example, we choose to say that the motorist's action is one of putting out his hand or one of signalling that he is going to turn. Earlier on, I referred to the action of drinking a glass of wine as an instance of the way in which the same action can have a different significance in different social contexts: it would have been no less, but also no more correct if I had described this as an instance of the way in which the same physical process can in such different contexts become a

different action. Wherever we decide to draw the line between the characterization of an action and the assessment of its significance, the point remains that the physical movement has to be interpreted, and that in order to interpret it correctly it will often be necessary to understand its social as well as its personal implications.

But if we grant this point, what follows? Certainly not, as the philosophers who lay stress upon it seem to think, that these actions cannot be explained in causal terms. For when it comes to accounting for an action, the only way in which the social context enters the reckoning is through its influence upon the agent. The significance of the action is the significance that it has for him. That is to say, his idea that this is the correct, or expedient, or desirable thing to do in these circumstances is part of his motivation; his awareness of the social context and the effects which this has on him are therefore to be included in the list of initial conditions from which we seek to derive his performance of the action by means of a causal law. Whether such laws are discoverable or not may be an open question; but the fact that these items figure among the data has no important bearing on it.

That human behaviour has a point or meaning, in this sense, is not even an argument against the materialist thesis that it is all physiologically determined. This thesis is indeed highly speculative; we are very far from having a physiological theory which would account for people's actions in specific detail, let alone from being in a position to apply one. But if the motives which impel men to act are, let us say, projections of the state of their brains, there is no reason why this should not apply to their social responses as much as to anything else. But surely no purely physiological account could be an adequate description of an action. Obviously it could not; even if the study of the agent's brain could give us all the information that we needed beyond the observation of his physical movements, we should still have to decode it. But this is not an objection to holding that actions can be explained in these terms, any more than the fact that to talk about wave-lengths is not to describe colours is an objection to the science of optics. This also shows that even if I am wrong in assimilating

motives to causes, it will not follow from this alone that human behaviour is not entirely subject to causal explanation. For the fact that we can explain an action in one manner by referring to the agent's motive leaves it a fully open question whether it cannot also be explained more scientifically in terms, say, of a physiological theory.

None of this settles the issue of determinism. I do not indeed think that it can be settled at this level, since I agree with those who hold that it should not be interpreted as an *a priori* question. It is of course true that not every event in human history could in fact be predicted. Not only would the making of each prediction itself then have to be predicted, and so *ad infinitum*, but as Professor Popper and others have rightly pointed out, it would follow that no one could ever have a new idea. But however comforting this may be to those who dislike conceiving of themselves as subjects for science, it does not go any way to prove that not all events in human history are susceptible of lawlike explanations. The strength of the determinists lies in the fact that there seems to be no reason why the reign of law should break down at this point, though this is an argument which seemed more convincing in the age of classical physics than it does today. The strength of the indeterminists lies in the fact that the specific theories which alone could vindicate or indeed give any substance to their opponents' case have not yet been more than sketched, though this is not to say that they never will be. Until such theories are properly elaborated and tested, I think that there is little more about this topic that can usefully be said.

A philosophical question which I have not here discussed, partly because I do not think that I have anything new to say about it, is whether the denial of determinism is implied in our usual ascriptions of moral and legal responsibility. In common with many other philosophers I used to hold that it was not, that in this respect the antithesis between the claims of free will and determinism was illusory, but in so far as this is a question of what people actually believe, I now think it more likely that I was wrong. This is indeed a matter for a social survey which, as I said before, would probably not yield a very clear result. I should, however, expect it to indicate that if it

were shown to them that a man's action could be explained in causal terms, most people would take the view that he was not responsible for it. Since it is not at all clear why one's responsibility for an action should depend on its being causally inexplicable, this may only prove that most people are irrational, but there it is. I am indeed strongly inclined to think that our ordinary ideas of freedom and responsibility are very muddle-headed: but for what they are worth, they are also very firmly held. It would not be at all easy to estimate the social consequences of discarding them.